

Work Order ID 154204

Tuesday, December 06, 2016 2:50:34 PM

154204

Page 1

Item ID: 647.0112

Revision ID:

Item Name: Strut Bracket

Start Date: 11/15/2016 Start Qty: 15.00

Required Date: 12/6/2016 Req'd Qty: 15.00

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date:

DEC 07 2016

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
647.0100	A								

100

100

Waterjet

FLOW CNC Waterjet

FLOW WATER JET

Memo

1-Cut as per Dwg

Dwg Rev: AProg Rev: 1A

2-Deburr if necessary

0.01

0.07

(18)

Dec 16/12/08

110

110

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.02

(18)

Dec 16/12/08

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DAS
9
9-89

Work Order ID 154204***154204***

Page 3

Tuesday, December 06, 2016 2:50:34 PM

Item ID: 647.0112 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut Bracket
Start Date: 11/15/2016 Start Qty: 15.00 ***15*** Cust Item ID:
Required Date: 12/6/2016 Req'd Qty: 15.00 ***15*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150		0.00							
150						18			
SprayPaint	Memo	0.02							
Spray Painting	PRIME AS PER DWG NOTE 6								
	BATCH: <u>134587</u>								
160	QC14- Inspect Spray Paint	0.00							
160						18			
QC	Memo	0.02							
Quality Control									
170	Identify as per dwg & Stock Location: <u>CCK107</u>	0.00							
170						18x			
Packaging	Memo	0.02							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

DAS 41 9-89 17-1-15
DAS 38 9-89 JAN 18 2017
DAS 26 9-89 JAN 19 2017

Work Order ID 154204

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154204

Page 4

Item ID: 647.0112

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Strut Bracket

Start Date: 11/15/2016 Start Qty: 15.00

15

Cust Item ID:

Required Date: 12/6/2016 Req'd Qty: 15.00

15

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.25

Quality Control

DAS
21
9-89

JAN 20 2017

Picklist Print

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Page 1

Work Order ID: 154204

154204

Parent Item: 647.0112

647 0112

Parent Item Name: Strut Bracket

Start Date: 11/15/2016

Required Date: 12/6/2016

Start Qty: 15.00

Required Qty: 15.00

Comments: IPP REV:A 12.08.14 NEW ISSUE DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S14GA		Purchased		No		100	sf	23.4800	0.0325	0.513158			

M304S14GA

304SS sheet .080

02/16/12/08

Location

Loc Qty

Loc Code

MAT019

23.48

M129972

5.7

M135061

1.29

M135689

2.4

M135860

14.09

1.6

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

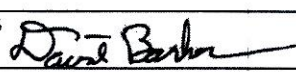
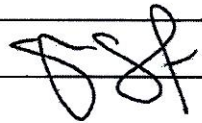
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

FIRST ARTICLE INSPECTION CHECKLIST

Rev	Date	Change	Revised by	Approved
A	12 10 26	New Issue	KJ	

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03985			SHEET 1 OF 2	
	DWG NO. 647.0100	REV: A	PREPARED BY J. BECKER	DATE: 7/15/13	EFFECT ON DWG ☐ INC. ☒ UNINC.
	DWG TITLE: SHEET METAL				
	APPROVED BY: ENGR. 	MFG 	QC 	EFF. NEXT ORDER	
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: REVISED NOTE 2. ADDED 647.0117				

IS

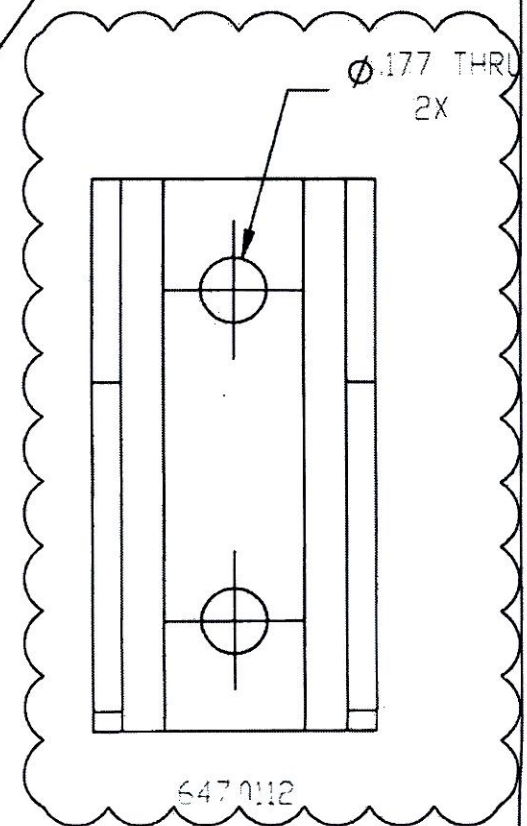
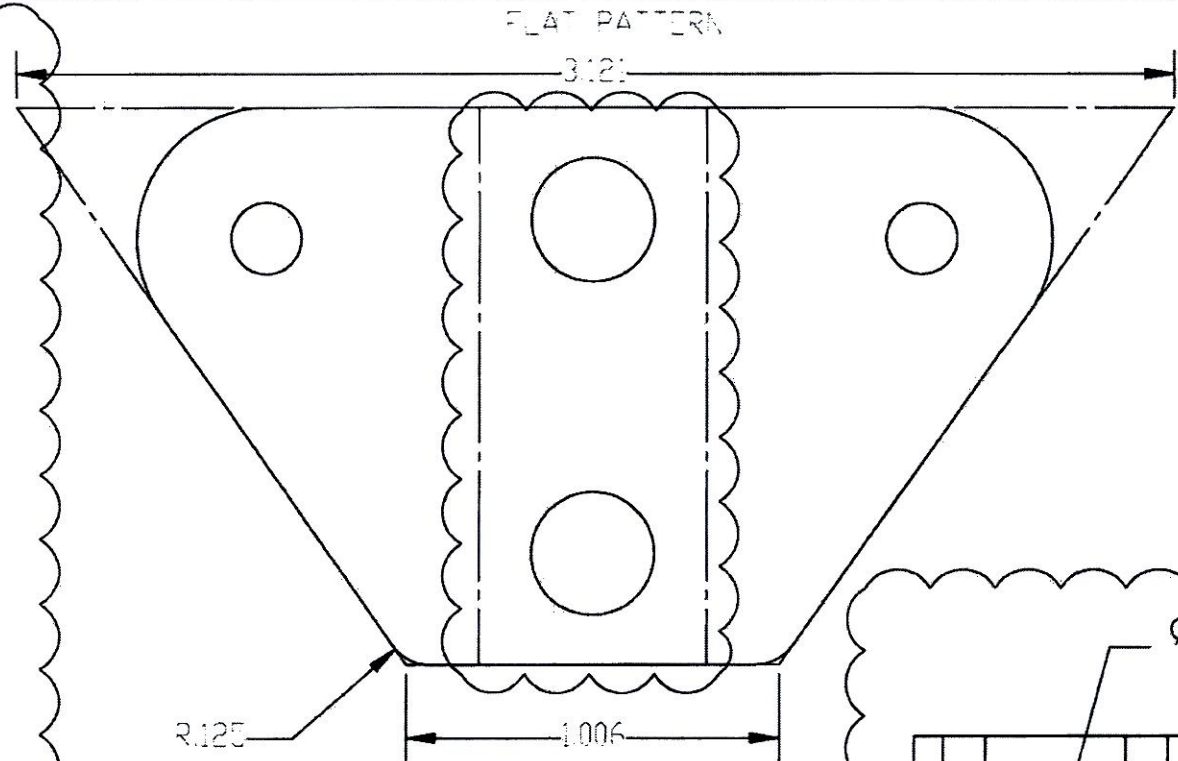
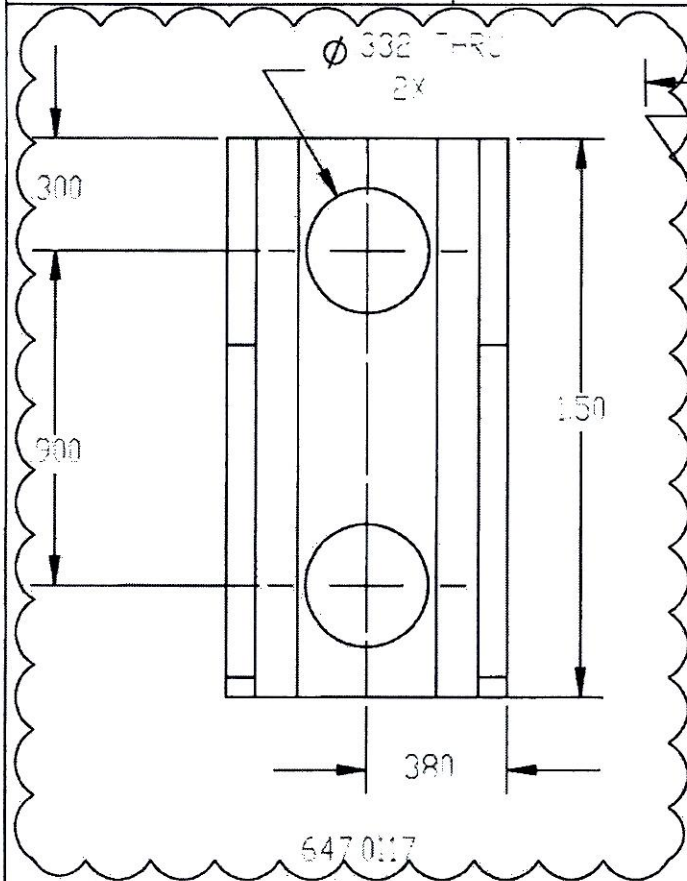
NOTES:

- 1 MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4.
- 2 FINISH: IAW MPP-172 ANODIZE IAW SECTION 2.1, PRETREATMENT IAW SECTION 3.1 AND PRIMER IAW SECTION 4.1.
3. DEBURR AND BREAK ALL SHARP EDGES.
4. IDENTIFY IAW MPP-120.
- 5 MATERIAL: 304 SS IAW AMS 5643.
- 6 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N.
- 7 OTHER DIMENSIONS SAME AS 647.0112.

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 154 204 MJS
 16-12-07

SHEET 1, ZONE D1 IS:

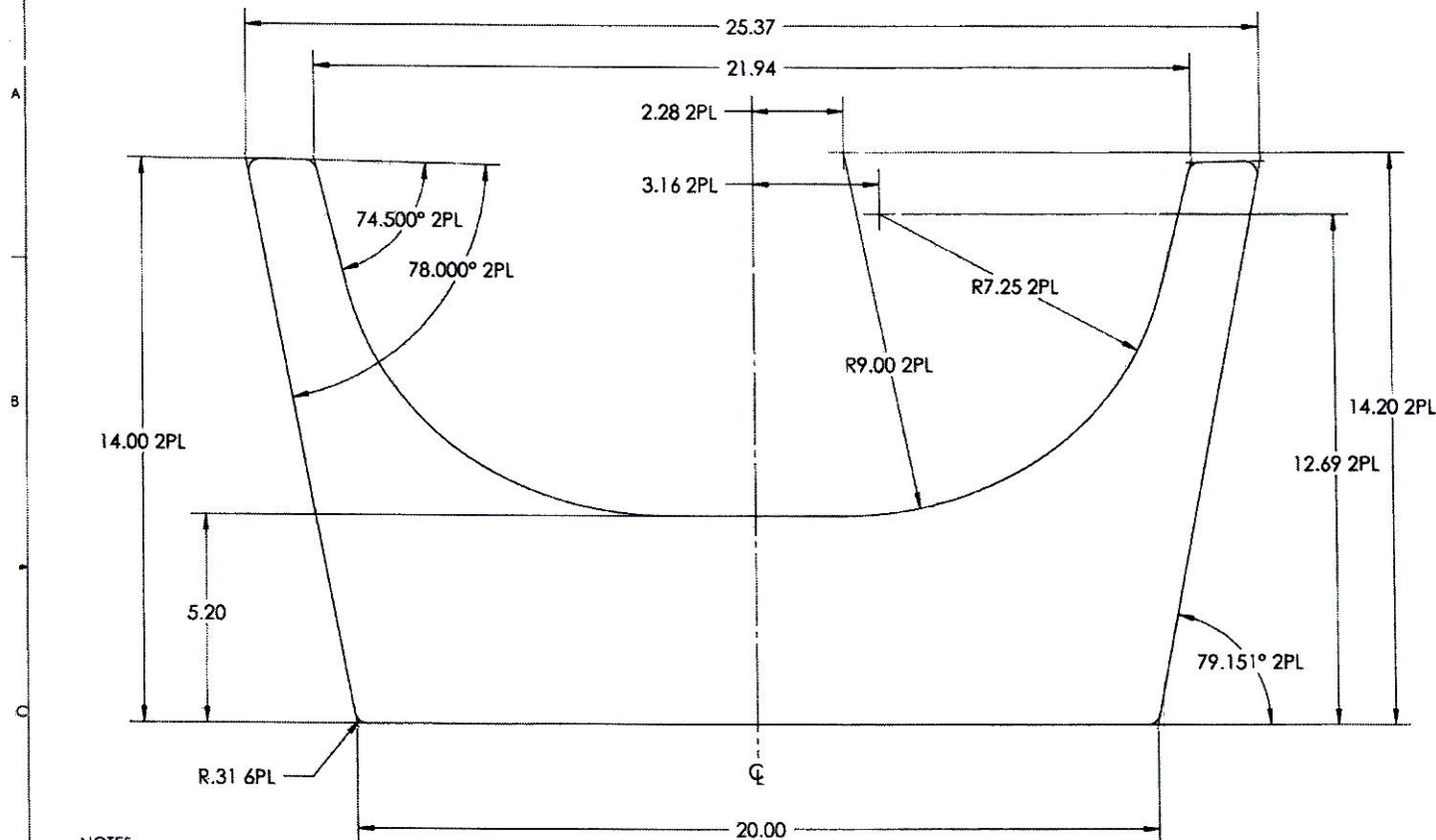
C	647.0117		STRUT BRACKET	△	△
F/N	TC	PART NUMBER	DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:			CHANGE CATEGORY	DER REVIEW REQUIRED	
☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM			☐ MAJOR ☒ MINOR	☐ YES ☒ NO	



SHEET 3, ZONE B2-4 IS:

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	LAST PROTOTYPE REVISION: PP2		APC
2	INITIAL RELEASE	05/26/07	P BRAVO
3	INCORPORATED ECN 0277: 07/04/08	04/26/11	P BRAVO



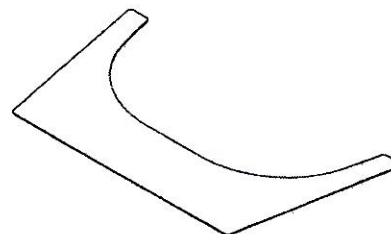
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UNINCORPORATED ECN(s)

03.985

NOTES:

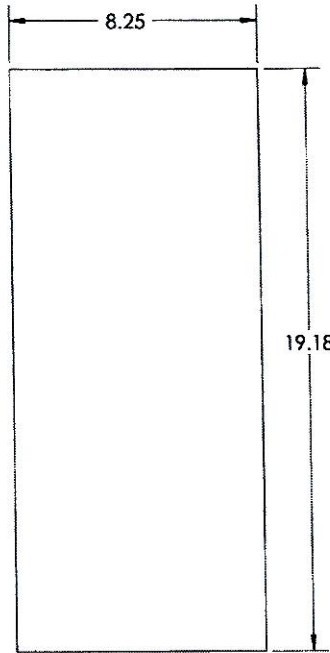
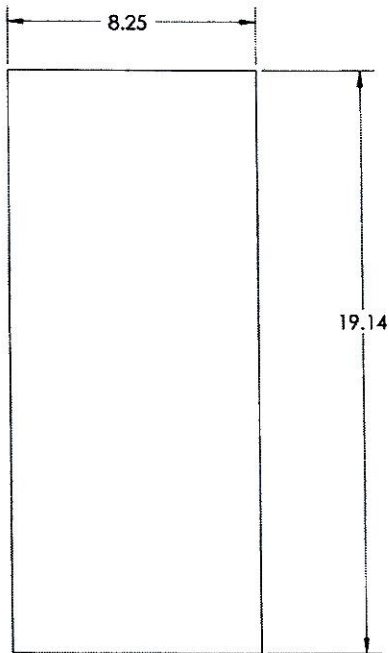
- 1 MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4.
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; PRETREAT PR-148 ADHESION PROMOTER; PRIME IAW MIL-P-23377J TYPE I CLASS N.
3. DEBURR AND BREAK ALL SHARP EDGES.
4. IDENTIFY IAW MPP-120.
- 5 MATERIAL: 304 SS IAW AMS 5643.
- 6 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N.



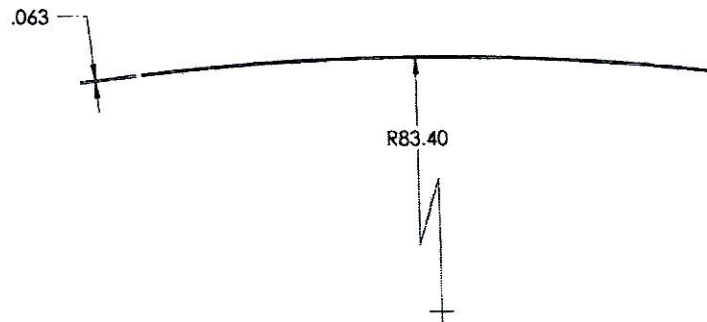
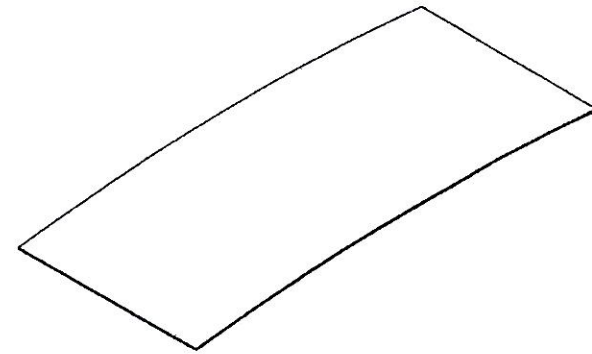
647.0110

		647.0116	DOUBLER	△	△
		647.0115	CLIP	△	△
		647.0114	CLIP	△	△
		647.0113	STRUT DOUBLER	△	△
		647.0112	STRUT BRACKET	△	△
		647.0111	PANEL	△	△
		647.0110	ROOF DOUBLER	△	△
	FIND #	PART #	DESCRIPTION	MATL	SPEC.
QTY	PARTS LIST				
NEXT ASSY (S)	ORIGINAL DATE: 05/26/07, 05/26/07, 05/26/07				
646.9500	DRAWN BY: R. ROYLAND, P. BRAVO; CHECKED BY: P. BRAVO; DRAWING APPROVAL: P. BRAVO; CONTRACTING: 05/26/07				
			APICAL INDUSTRIES		
			2608 TEMPLE HEIGHTS DR., OCEANSIDE, CA. 92056-3512 (760)724-5300		
			SHEETMETAL		
			SIZE: 1/2" X 1/2" X 1/2"	QTY: 1	REV: A
			SCALE: NONE	SHEET 1 OF 6	

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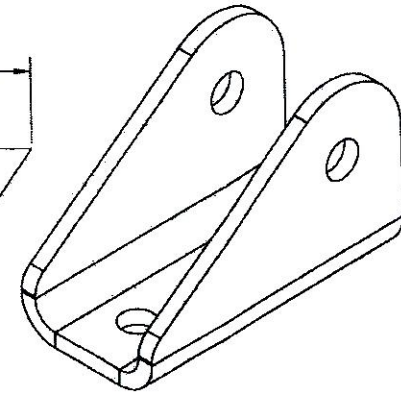
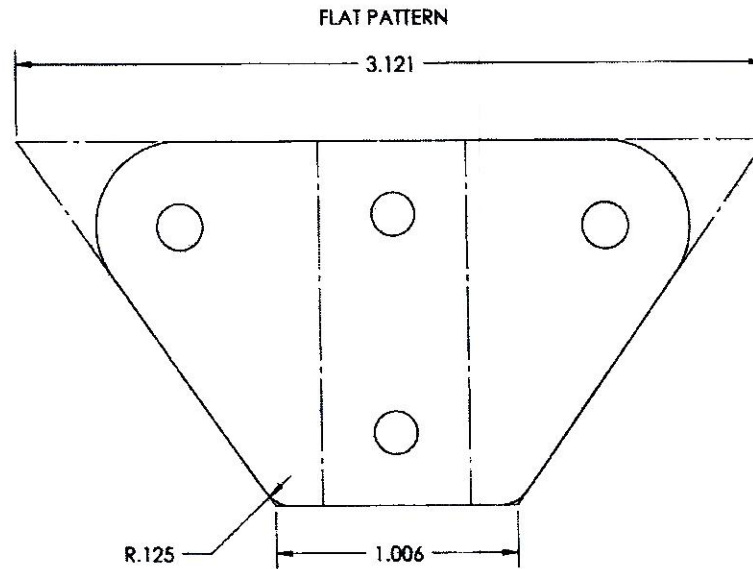
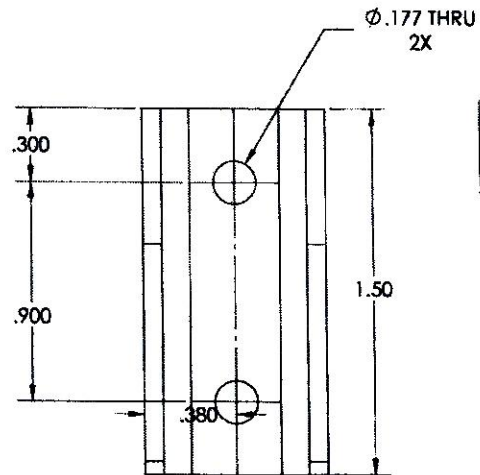
FLAT PATTERN



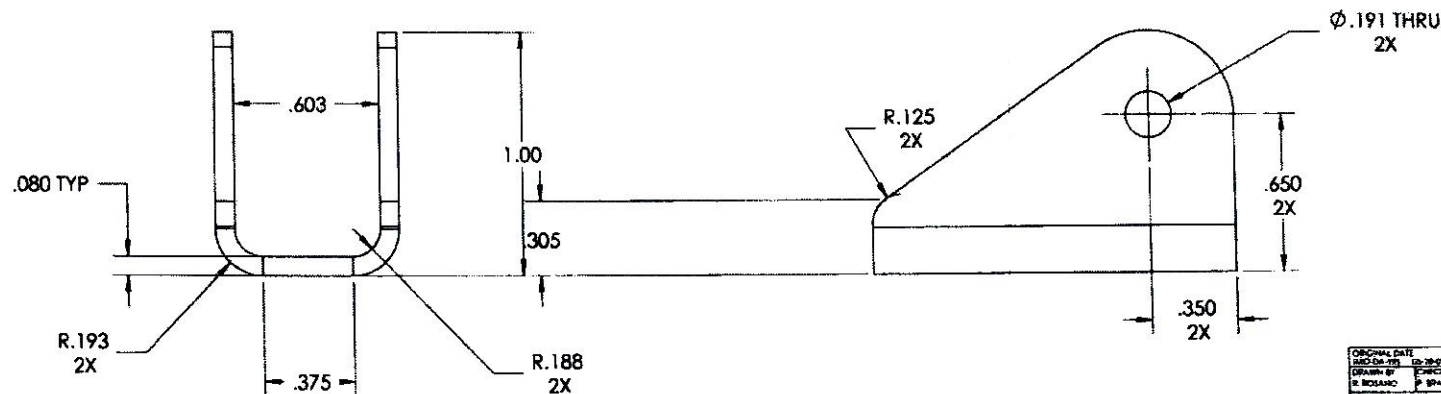
ORIGINAL DATE 1/10/08-10 05:28:09		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)774-5300	
DRAWN BY P. ROSANO	CHECKED P. BRAVO		
DRAWING APPROVAL P. BRAVO		SHEETMETAL	
CONTRACT NO.		REV. A	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ± .01 ANGLES ± .5°		REV. A	
REV. B	CAGE CODE 079A16	DWG. NO. 647.0100	SHEET 2 OF 6
SCALE: NONE			

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REV.	DESCRIPTION	DATE	APPROVED



647.0112



ORIGINAL DATE
1/20/00
DRAWN BY
R. ROSANO
DESIGNED BY
P. BRAY
CHECKED BY
P. BRAY

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

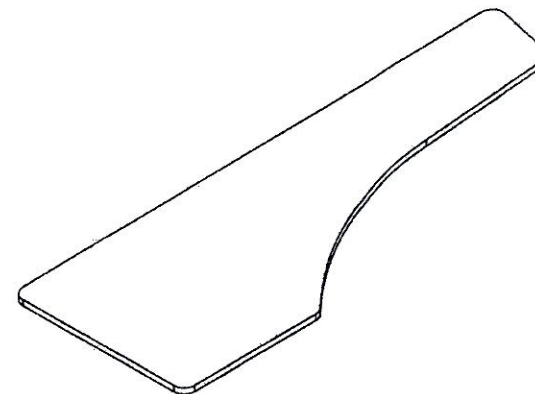
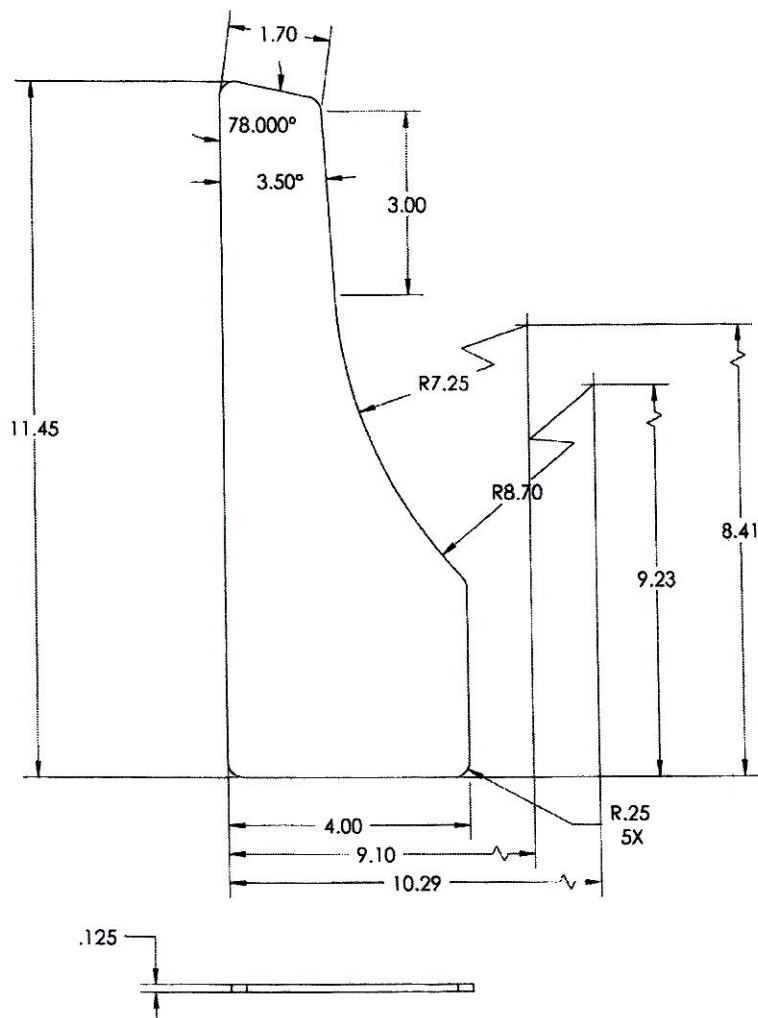
SHEETMETAL

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
3 PLACE DECIMALS ±.005
ANGLES ± 5°

REV. 1. AGE CODE: 8 07/02/06 DWG. NO. 647.0100
SCALE: NONE SHEET 3 OF 6

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

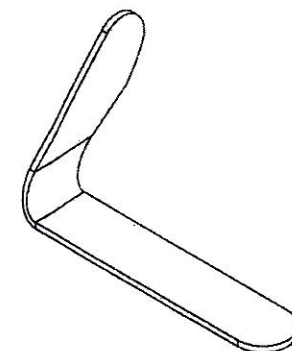
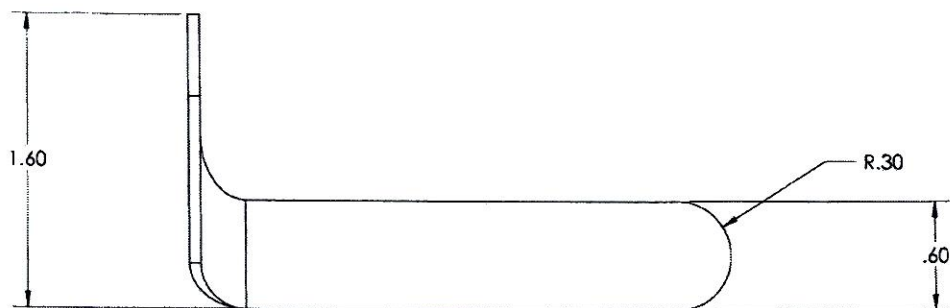


647.0113

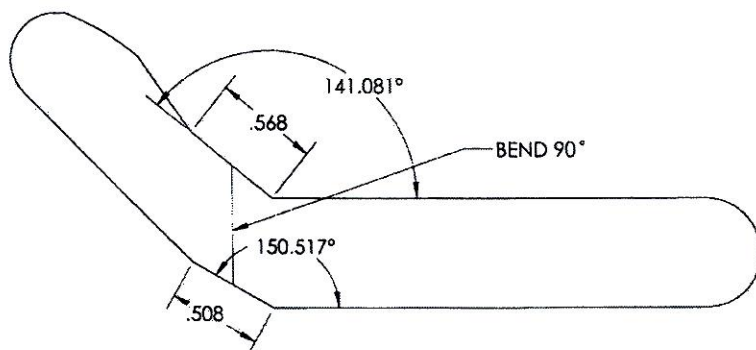
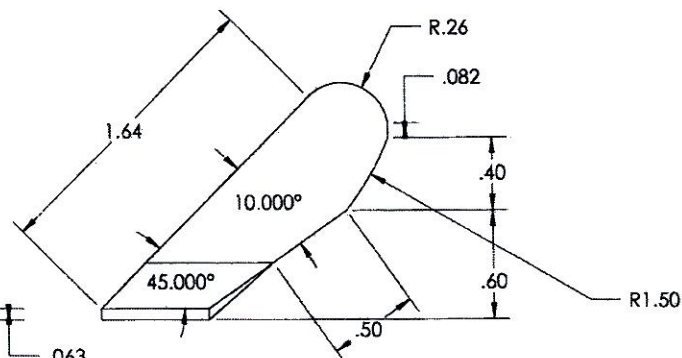
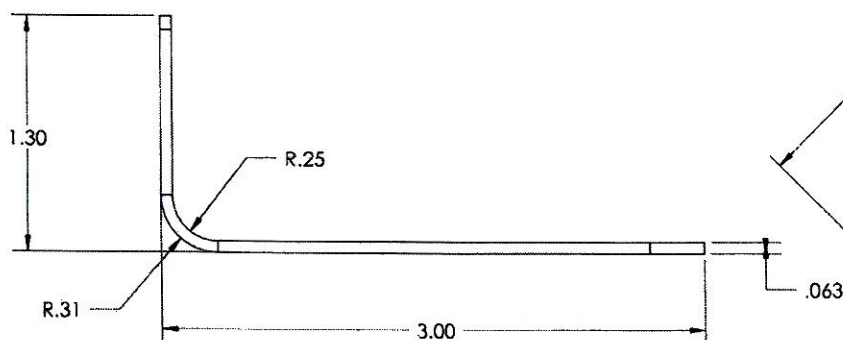
ORIGINAL DATE: 05-28-09		APICAL INDUSTRIES	
DRAWN BY: J. ROSANO		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: P. BRAVO		OCEANSIDE, CA. 92036-3512 (760) 724-5300	
DRAWING APPROVAL:		SHEETMETAL	
CONTRACT NO:		SCALE: NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS $\pm .01$ ANGLES $\pm 1^\circ$		SIZE: 8 1/2 X 11	REV: A
SCALE: NONE		647.010J	SHEET 4 OF 6

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REV.	DESCRIPTION	DATE	APPROVED



647.0114 SHOWN
647.0115 OPPOSITE

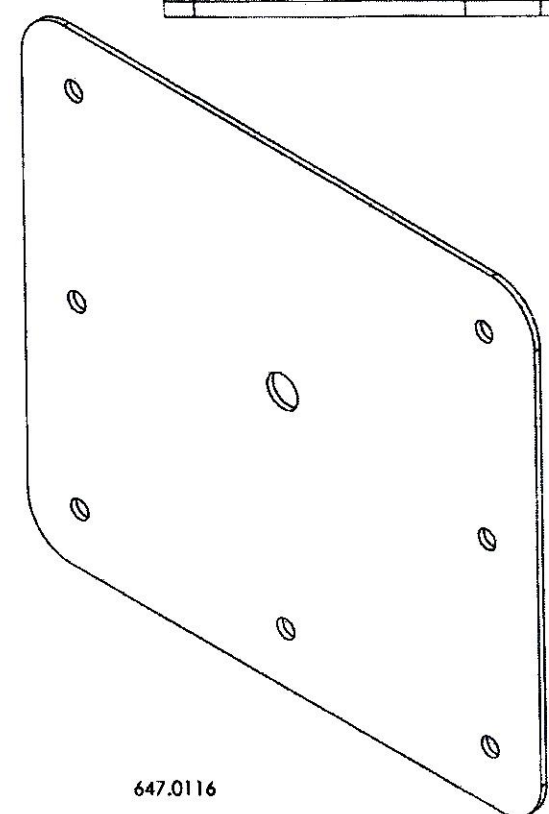
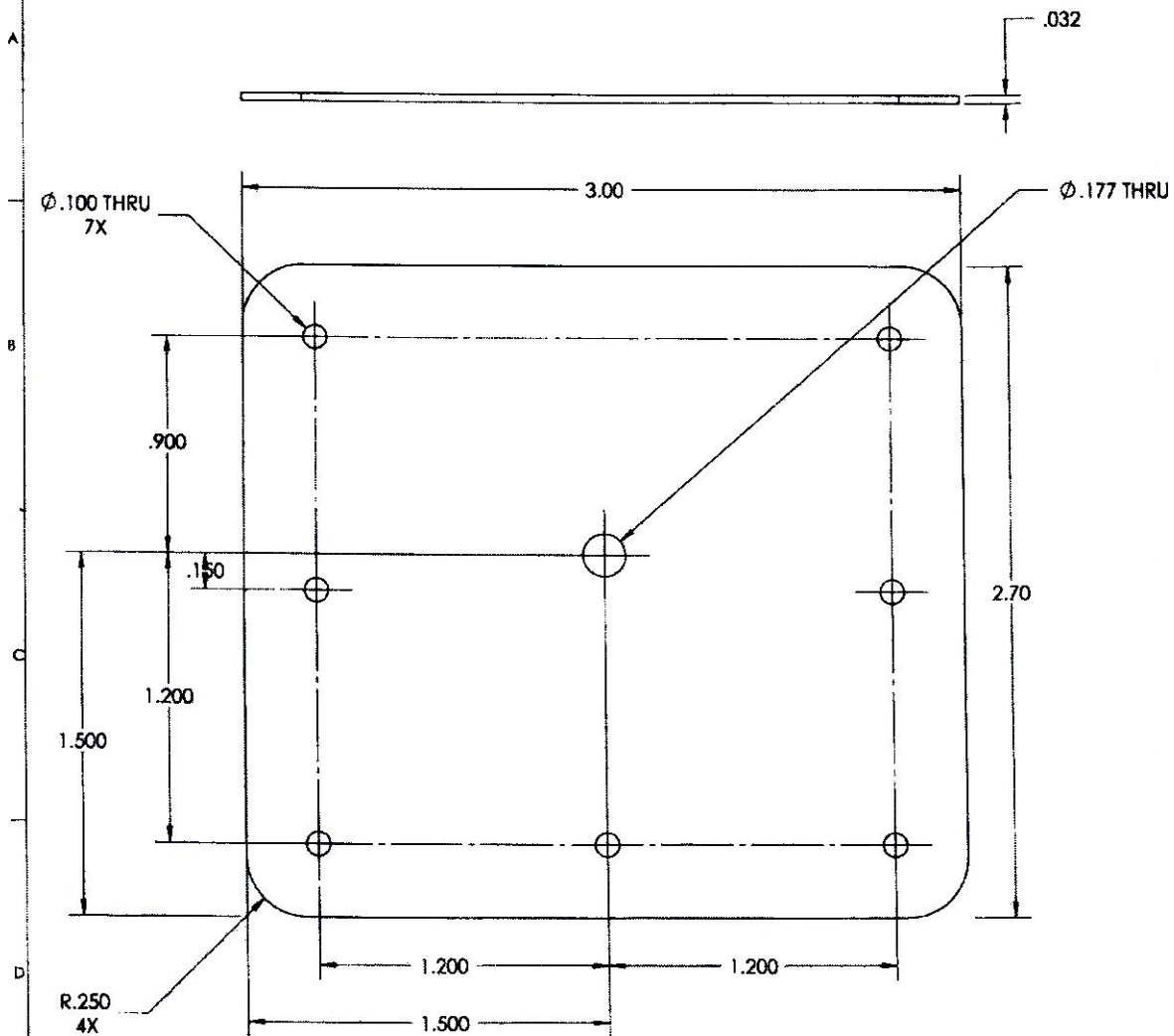


FLAT PATTERN

ORIGINAL DATE 01-20-09	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY P. ROSANO	CHECKED P. BRAVO	SHEETMETAL
DESIGNING APPROVAL P. BRAVO		DATE 07/26/09
CONTRACT NO.		DWG NO 647.0100
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		REV A
SCALE NONE		SHEET 5 OF 6

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



647.0116

ORIGINAL DATE 2/20/88		APICAL INDUSTRIES	
DRAWN BY: B. ROSARIO		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: P. BRAY		OCEANSIDE, CA. 92056-3512	
DESIGNED BY: P. BRAY		(760) 724-5300	
CORRECTED BY:		SHEETMETAL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACES DECIMALS $\pm .01$ 2 PLACES DECIMALS $\pm .005$ ANGLES $\pm 1^\circ$		SURF: 8	QTY: 647.0100
SCALE: NONE		DWG NO: 647.0100	REV: A
SHEET: 6 OF 8			